

CLAIMS

What I claim is:

1. A track driven device having a plurality of belts, wherein each of the plurality of belts encompass a drive wheel and an idle wheel, said drive wheel for rotating the belt and idle wheel via the belt, the track driven device comprising:

a plurality of positive drive belt systems for positively driving the plurality of belts, each of the plurality of positive drive belt systems having the drive wheel and the idle wheel encompassed by the belt, wherein the drive wheel and the idle wheel have apertures in their outer circumference, wherein the belt has a ground engaging surface and a wheel engaging surface, said wheel engaging surface having lugs thereon for mating with the apertures in the drive wheel and the idle wheel such that when the drive wheel rotates, the belt is positively driven;

a plurality of suspension systems for absorbing load stresses, each of the plurality of suspension systems having a lower suspension bracket, said lower suspension bracket having a first end toward a front end of the track driven device and operatively mounted to a suspension cylinder and a distal end toward a middle section of the track driven device, each of the plurality of suspension systems operatively and pivotably mounted to a track frame pivot on a main frame of the track

driven device, the idler wheel rotatably mounted between a first side and a second side of the lower suspension bracket such that when the idler wheel encounters an object or depression, the lower suspension bracket moves in a vertical direction and pivots about the track frame pivot thereby allowing the idler wheel to move vertically without moving the main frame proportionally vertical, and the vertical movement of the idler wheel dampened by the suspension cylinder;

a plurality of belt tensioning systems for maintaining tension on the plurality of belts, each of the plurality of belt tensioning systems having a track tension cylinder operatively mounted between an axle of the idle wheel and a cylinder bracket mounted to the main frame, wherein the track tension cylinder maintains tension on the belt by moving the axle of the idle wheel in a horizontal direction; and

a plurality of positive hydraulic braking systems for positively braking the idle wheels and the drive wheels on the track driven device, each of the plurality of positive hydraulic braking systems having a brake disc mounted to the idle wheel and the drive wheel, and a plurality of calipers operatively mounted to the main frame, wherein the plurality of calipers apply pressure on the brake discs of the idle wheel and the drive wheel to slow and stop the rotation of said idle wheel and said drive wheel.

2. The track driven device according to claim 1, further comprising a plurality of middle rollers rotatably mounted to the main frame and between the idle wheel and the drive wheel.

3. The track driven device according to claim 2, wherein the idle wheels and the drive wheels have sides, said sides having openings therein for allowing foreign objects to pass therethrough.

4. The track driven device according to claim 2, wherein each of the plurality of suspension systems has a bearing cup and a bearing cap operatively mounted between track frame pivot and the main frame.

5. The track driven device according to claim 4, wherein the bearing cup and the bearing cap have inside surfaces for receiving the track frame pivot, and said inside surfaces are lined with neoprene rubber.

6. The track driven device according to claim 2, wherein the suspension cylinder has a suspension piston rod at a first end operatively attached to an upper suspension bracket, said upper suspension bracket operatively attached to the main frame,

and wherein the suspension cylinder has a distal end operatively attached to the lower suspension bracket such that when the idler wheel encounters an object, said suspension cylinder dampens the vertical movement of the idler wheel.

7. The track driven device according to claim 6, further including an accumulator hydraulically connected to the suspension cylinder via a suspension pressure line for providing suspension travel and load support.

8. The track driven device according to claim 7, further including a side thrust bearing operatively attached to the lower suspension bracket and an inside support for precluding side bearing thrust movement but allowing vertical movement.

9. The track driven device according to claim 8, further including:

a yoke having a first axle bracket and a second axle bracket for supporting the rotating axle;

a guide member operatively attached to a bottom surface of the yoke, and wherein the guide member is positioned between the yoke and a top surface of the main frame; and

wherein said yoke is operatively connected to the track tension cylinder, and said yoke is movable in the horizontal direction along the top surface of the main frame.

10. The track driven device according to claim 9, further including a first track guide operatively attached to the first axle bracket, a second track guide operatively attached to the second axle bracket, and wherein the first track guide and the second track guide preclude the yoke from falling off of the main frame during movement.

11. The track driven device according to claim 10, further including a tension accumulator hydraulically connected to the track tension cylinder via a tension pressure line for providing belt tensioning.

12. The track driven device according to claim 2, wherein the middle rollers have ground contacting surfaces coated with rubber.

13. The track driven device according to claim 11, wherein each of the plurality of calipers has two pads, wherein one of the pads is placed on a first side of the brake disc and another of the pads is placed on the second side of the brake disc, and

wherein when the caliper closes, the pads press against the brake disc thereby slowing or stopping rotation of the idle wheel and the drive wheel.

14. The track driven device according to claim 12, further including a plurality of dust covers enclosing the plurality of calipers.

15. A track driven device having a plurality of belts, wherein each of the plurality of belts encompasses a drive wheel and an idle wheel, said drive wheel for rotating the belt and idle wheel via the belt, the track driven device comprising:

a plurality of suspension systems for absorbing load stresses, each of the plurality of suspension systems having a lower suspension bracket, said lower suspension bracket having a first end operatively attached to a piston rod of a suspension cylinder and a distal end operatively and pivotably mounted to a track frame pivot on a main frame of the track driven device, the idler wheel rotatably mounted between a first side and a second side of the lower suspension bracket such that when the idler wheel encounters an object or depression, the lower suspension bracket moves in a vertical direction and pivots about the track frame pivot thereby allowing the idler wheel to move vertically without moving the main frame proportionally vertical, and the vertical movement of the idler wheel dampened by the suspension cylinder; and

a plurality of belt tensioning systems for maintaining tension on the plurality of belts, each of the plurality of belt tensioning systems having a track tension cylinder operatively mounted between an axle of the idle wheel and a cylinder bracket mounted to the main frame, wherein the track tension cylinder

maintains tension on the belt by moving the axle of the idle wheel in a horizontal direction.

16. The track driven device according to claim 15, further including an accumulator hydraulically connected to the suspension cylinder via a suspension pressure line for providing suspension travel and load support.

17. The track driven device according to claim 16, further including a side thrust bearing operatively attached to the lower suspension bracket and an inside support for precluding side bearing thrust movement but allowing vertical movement.

18. The track driven device according to claim 17, further including:

a yoke having a first axle bracket and a second axle bracket for supporting the rotating axle;

a guide member operatively attached to a bottom surface of the yoke, and wherein the guide member is positioned between the yoke and a top surface of the main frame; and

wherein said yoke is operatively connected to the track tension cylinder, and said yoke is movable in the horizontal direction along the top surface of the main frame.

19. The track driven device according to claim 18, further including a first track guide operatively attached to the first axle bracket, a second track guide operatively attached to the second axle bracket, and wherein the first track guide and the second track guide preclude the yoke from falling off of the main frame during movement.

20. The track driven device according to claim 19, further including a tension accumulator hydraulically connected to the track tension cylinder via a tension pressure line for providing belt tensioning.